IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of Akio Katsube et al. Application No.: 09/689,774 Filed: October 13, 2000 For: HOLDING JIG FOR ELECTRONIC PARTS, HOLDING METHOD THEREFOR, AND MANUFACTURING METHOD FOR ELECTRONIC PARTS	**MAIL STOP APPEAL BRIEF - PATENTS** Group Art Unit: 3726 Examiner: JERMIE E. COZART Appeal No.: _____

APPEAL BRIEF

Mail Stop APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This appeal is from the decision of the Primary Examiner dated May 21, 2008 finally rejecting claims 7, 9-14 and 19, which are reproduced as the Claims Appendix of this brief.

☐ A check covering the ☐ $ 255 ☐ $ 510 Government fee is filed herewith.

☒ Charge ☐ $ 255 ☒ $ 510 to Credit Card. Form PTO-2038 is attached.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

Table of Contents

I. Real Party in Interest....1

II. Related Appeals and Interferences....1

III. Status of Claims....1

IV. Status of Amendments....1

V. Summary of Claimed Subject Matter....1

VI. Grounds of Rejection to be Reviewed on Appeal....3

VII. Argument....3

VIII. Conclusion....6

IX. Claims Appendix....6

X. Evidence Appendix....6

XI. Related Proceedings Appendix....6

I. Real Party in Interest

The real party in interest for this Appeal and the present application is Murata Manufacturing Co., Ltd., by way of assignment recorded in the U.S. Patent and Trademark Office at reel/frame 011374/0810.

II. Related Appeals and Interferences

To the best of Appellants' knowledge there are no other appeals, interferences or judicial proceedings which will directly affect or be directly affected by, or have bearing on, the Board's decision in the pending appeal.

III. Status of Claims

Claims 1-4, 7, 9-14 and 19 are pending. Claims 1-4 have been withdrawn by virtue of an Election of Species Requirement. Claims 7, 9-14 and 19 currently read on the elected species. Claims 7, 9-14 and 19 were rejected in the November 19, 2007 final rejection.

IV. Status of Amendments

No Amendment was filed subsequent to the final Office Action.

V. Summary of Claimed Subject Matter

The claimed invention relates to a manufacturing method for manufacturing electronic parts such as semiconductor integrated circuits. When electronic parts are manufactured, a holding jig is used to hold the electronic parts in order to handle a plurality of parts collectively.

In related art methods, when a plurality of semiconductor chips are wire bonded by using a holding jig, substrates are arranged in a tray and the semiconductor chips are die bonded to each of the substrates and then wire bonded. Because the substrates are required to be fixed in the tray, an upper surface of the

tray was covered by a pressure jig including openings arranged in accordance with an arrangement of the substrates. A pressure leaf spring was used to fix each of the substrates. However, this led to errors in positional recognition during automated processing and required additional processes to correct the errors. Further, the use of pressure leaf springs affected the ability to miniaturize the substrates.

In accordance with one of the features of the invention, Appellants have recognized an advantages arrangement wherein a substrate is mounted onto a holding jig made of an elastic material. At least one surface of the elastic material is adhesive and the substrate is mounted on the holding jig by the adhesive strength of the surface of the elastic material. An electronic part, such as a semiconductor integrated circuit, is mounted onto the substrate and electrically connected to the substrate while the substrate is held on the surface of the elastic material. Ultrasonic waves are applied to a bonding portion at which the electric connection is performed while the substrate is held on the surface of the elastic material.

Independent Claim 7 is directed to a method of manufacturing electronic parts, comprising: providing a holding jig made of elastic material, wherein at least one surface of the elastic material is adhesive (Fig. 4, elements 1, 2 and the paragraph beginning at line 21 of page 9 of Applicants' specification); mounting a substrate on the holding jig by an adhesive strength of the surface of the elastic material (Fig. 5a, element 3 and the paragraph on page 9 beginning at line 21); mounting an element onto said substrate and electrically connecting the element to said substrate while the substrate is held on the surface of the elastic material (Fig. 5b and the paragraph beginning at line 15 of page 10); and applying ultrasonic waves to a bonding portion at which the electric connection is performed while the substrate is held on the surface of the elastic material (Fig. 6b and the paragraph beginning at line 11 of page 11).

With this arrangement, an exclusive tray is not required for each type electronic part and the holding jig is appropriate for broad use with a plurality of substrates.

VI. Grounds of Rejection to be Reviewed on Appeal

The first grounds of rejection to be reviewed on appeal is of Claims 7, 11 and 14 under 35 U.S.C. §102(b) over U.S. Patent No. 3,561,107 to Best et al. The second grounds of rejection to be reviewed on appeal is of Claims 7, 11 and 14 under 35 U.S.C. §103(a) over Best in view of U.S. Patent No. 3,225,511 to Weissenstern. The third grounds of rejection to be reviewed on appeal is of Claims 9, 10 and 12 under 35 U.S.C. §103(a) over Best and Weissenstern and further in view of U.S. Patent No. 4,098,945 to Oehmke. The fourth grounds of rejection to be reviewed on appeal is of claims 9, 10 and 12 under 35 U.S.C. §103(a) over Best in view of Oehmke.

VII. Argument

A. First Grounds of Rejection

Best discloses a method of attaching chips to printed circuits. A dielectric substrate 10 includes a printed circuit, for example, metallic conductive members 12, 14 and 16, formed on the substrate surface. The metallic conductive members include contact areas 18, 20 and 22 corresponding to contact areas 24, 26 and 28 formed on transistor chip 30. A vibratory member 40 is brought into contact with the chip so that solid conductive pillars 32, 34 and 36 are attached, bonded or welded to the respective contact areas.

The Office Action identifies metallic conductive members 12, 14 and 16 as corresponding to the substrate of claim 7. However, the metallic conductive members are a printed circuit and are not mounted on the dielectric substrate 10 by an adhesive surface of the dielectric substrate 10. Instead, Best merely discloses at column 2 lines 24-26, "A printed circuit may be formed by any of several methods well known by one familiar with the art." The paragraph beginning at line 27 of column 2 in Best discloses that contact areas 24, 26 and 28 may be formed by selective vapor deposition metallizing or like methods. One of ordinary skill would not have formed the conductive members 12, 14 and 16 on the dielectric substrate 10 using only the alleged adhesive properties of the dielectric substrate 10.

Best also discloses an anvil 38 and a substrate 10. Applicants' independent Claim 7 recites a holding jig and a substrate mounted on the holding jig by an adhesive strength of the surface of elastic material of the holding jig. Best does not disclose how the substrate 10 is held on the anvil 38.

Best discloses that the substrate 10 can be made of glass, ceramic, glass-ceramic or plastic. Plastic does not inherently have an adhesive property as alleged by the Examiner.

> The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic.
>
> To establish inherency, the intrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

See MPEP §2112 (IV) citing In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993), In re Oelrich, 666 F.2d 578, 581-582, 212 USPQ 323, 326 (CCPA 1981) and In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-1951 (Fed. Cir. 1999).

Thus, Best does not disclose providing a holding jig made of an elastic material, wherein at least one surface of said elastic material is adhesive and mounting a substrate on the holding jig by an adhesive strength of the surface of the elastic material as in Applicants' independent Claim 7.

Dependent claims 11 and 14 are allowable for at least the reasons discussed above as well as for the individual features they recite. For example, dependent Claim 11 recites the step of holding the substrate includes using the holding jig which includes a laminate structure of a hard plate and the elastic material. Best discloses substrate 10 is placed on anvil 38. Clearly, anvil 38 is not a laminated structure. The combination of anvil 38 and substrate 10 do not correspond to Applicants' claimed holding jig as alleged in the Office Action.

B. Second Grounds of Rejection

Weissenstern is cited to provide the feature of ultrasonic bonding, and thus does not provide the deficiencies of Best discussed above. Thus, Claims 7, 11 and 14 are distinguishable over Best in view of Weissenstern.

C. Third and Fourth Grounds of Rejection

Claims 9, 10 and 12 depend from claim 1 and are allowable for at least the reasons discussed above as well as for the individual features they recite.

Furthermore, Applicants respectfully disagree with the Office Action's observation that an ordinarily skilled artisan would have been motivated to combine Best and Oehmke. In particular, one of ordinary skilled would not have been motivated to combine the soft conformable conductive composition of Oehmke with Best because the substrate of Best 10 is dielectric. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983) *cert. denied,* 469 US 851 (1984).

Oehmke addresses the problem of providing a conductive interface between two already conductive bodies or surfaces. As stated in Oehmke at the paragraph beginning at line 26 of column 1, there is a need for a conductive, pliable, soft, conformable material that may be conveniently applied or inserted in areas where a relative rigid sheet of conductive material would not be suitable. Oehmke states that in some situations it is desirable to have a conductive conformable adhesive material so that the conductive material would be normally tacky in relationship to various other surfaces to ensure good electrical contact therebetween. As discussed in the paragraph beginning at line 31 of column 7, soft conductive material can be prepared which has advantages normally found in pressure sensitive adhesive fastening or bonding with the additional advantage of being electrically conductive. In the paragraph beginning at line 54, column 7, Oehmke states that the compositions are useful for a wide variety of applications including peelable adhesive fastening of metallic materials without interruption of the electrical conductive pathway between them, stick on anodic protection strips, grounding tapes and adhesively fastening metallic objects together without breaking the electrical path through them.

However, there is no disclosure or suggestion of using such a material in a manufacturing process or, in particular, a holding jig.

Thus, Oehmke does not overcome the deficiencies of Best noted above and claims 9,19 and 12 are distinguishable over Best, Oehmke and Weissenstern.

VIII. Conclusion

In view of the above remarks Appellants respectfully request the rejections of the Office Action dated November 19, 2007 be reversed.

IX. Claims Appendix

See attached Claims Appendix for a copy of the claims involved in the appeal.

X. Evidence Appendix

None.

XI. Related Proceedings Appendix

None.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date July 21, 2008

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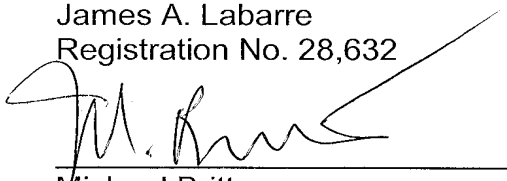

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IX. CLAIMS APPENDIX

The Appealed Claims

1. A holding jig comprising:

an elastic material wherein at least the surface thereof is adhesive and conductive, and wherein an electronic part or component constituting the electronic part is holdable by the adhesive strength of the surface of the elastic material.

2. The holding jig according to claim 1, wherein the elastic material is made to be conductive by adding conductive material to the elastic material.

3. The holding jig according to claim 1, wherein the elastic material is made by conductive by installing a wiring using conductive material on the surface of the elastic material.

4. The holding jig according to claim 1, wherein the elastic material is made to be conductive by installing a wiring using conductive material inside the elastic material, the wiring being exposed on the surface of the elastic material.

7. A method of manufacturing electronic parts, comprising the steps of:

providing a holding jig made of an elastic material, wherein at least one surface of said elastic material is adhesive;

mounting a substrate on the holding jig by an adhesive strength of said surface of the elastic material;

mounting an element onto said substrate and electrically connecting the element to said substrate while the substrate is held on the surface of the elastic material; and

applying ultrasonic waves to a bonding portion at which the electric connection is performed while the substrate is held on the surface of the elastic material.

9. The method of manufacturing electronic parts according to claim 7, wherein the hardness of the elastic material is a rubber hardness degree of at least A30.

10. The method of manufacturing electronic parts according to claim 9, wherein the step of holding said substrate includes using the holding jig which comprises heat-resistant material having a heat-resistance temperature of about 250°C.

11. The method of manufacturing electronic parts according to claim 9, wherein the step of holding said substrate includes using the holding jig which includes a laminate structure of a hard plate and the elastic material.

12. The method of manufacturing electronic parts according to claim 9, wherein the elastic material comprises silicone resin.

13. The method of manufacturing electronic parts according to claim 9, wherein the mounting process includes a wire bonding process.

14. The method of manufacturing electronic parts according to claim 9, wherein the mounting process includes a bump bonding process.

19. The method of manufacturing electronic parts according to claim 7 wherein the adhesive strength of the surface of the elastic material is 1 to 10 g/mm^2.

X. EVIDENCE APPENDIX

(None)

XI. RELATED PROCEEDINGS APPENDIX

(None)